

CASE STUDY: U.S. NATIONAL ARCHIVES & RECORDS ADMINISTRATION

CUSTOM SCANNER LEADS TO INDUSTRY CHANGE

For more than 30 years, The Crowley Company (Crowley) has helped the U.S. National Archives and Records Administration (NARA) stay at the forefront of technical advancements in the records management and preservation industries by providing [capture equipment](#), [scanning services](#) and [technical support](#).

Of all documents and materials created yearly by the United States Federal government, only two to five percent are considered legally or historically important enough to be permanently preserved and archived.¹ This preservation takes one of two forms: conservation (the remedial repair of damaged records) or reformatting. With billions of Federal government records to preserve – the majority of which are text-based – NARA’s mission is to make these records accessible in an ever-changing environment. This has necessitated a migration toward digital formatting.

THE OPPORTUNITY

In 2004, NARA Preservation and Imaging Specialist, the now late Steven Puglia, along with Jeffrey Reed and Erin Rhodes, authored “Technical Guidelines for Digitizing Archival Materials for Electronic Access: Creation of Production Master Files – Raster Images.” This guideline, an update to an earlier document, intended to provide a technical foundation and standardization for digitization activities. The guide, coupled with the creation of NARA’s electronic archives infrastructure for permanent storage, led to department approval for the purchase of lab equipment to digitize the NARA collections.

THE CHALLENGE

The response to the original RFP specifications for the ideal overhead scanner revealed a void in the document imaging industry: such a scanner did not yet exist.

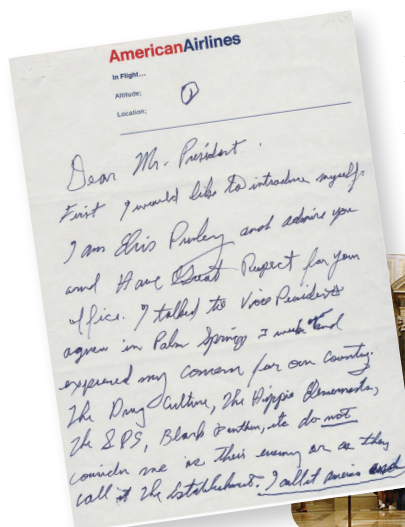
As the preferred North American distributor for [Zeutschel GmbH](#) (Zeutschel), a well-respected manufacturer and distributor of [large-format scanners](#) for the preservation of cultural heritage archives, The Crowley Company partnered with the firm’s team of German engineers to design a scanner to meet NARA’s rigid demand for color-quality output from a line scan camera with unheralded image quality and speed.



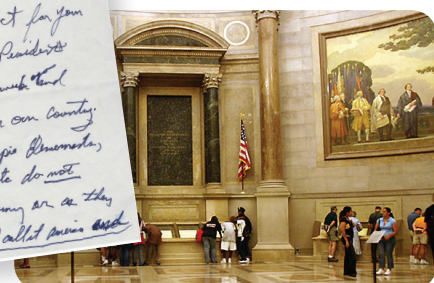
During the scanner development, a Crowley expert technician acted as a field-testing liaison between manufacturer and user. After nearly four years of engineering and field-testing, the Zeutschel OmniScan (OS) 14000 scanner achieved the specified spatial frequency response (SFR) and image noise levels and was deemed a success.

To complement the camera, Zeutschel designed OmniScan 12 64-bit software to allow for image processing while moving on to the next scan – something that no other software program at the time could accomplish with files of such large size.

Retired in 2021, the OS 14000 scanner series broke ground in digital image quality, making archive-quality capture possible for over 700 institutions worldwide. Today, Zeutschel offers a new generation of archive scanners for the digitization of still media to meet or exceed [FADGI](#), [ISO](#) and [Metamorfoze](#) imaging guidelines.



This first page of a letter from Elvis Presley to President Richard M. Nixon illustrates the many types of documents and images housed in the NARA collections. With the advent of sophisticated scanning equipment, many are digitized and made available online for public access.



¹ <https://www.archives.gov/publications/general-info-leaflets/1-about-archives.html>

A MULTI-VENDOR SOLUTION

Throughout the years, Crowley has also provided multiple digitization solutions to meet NARA's exacting standards for digitization and preservation.

Large Format Overhead Scanners

As of this printing, there are 11 Zeutschel OS 14000 and two OS 12000 scanners in operation at NARA's College Park (Md.) location for the digitization of books, maps, photos, hand-written documents, engineering and architectural plans and other archival records.

Film/Fiche Scanners and Solutions

NARA uses [Wicks and Wilson](#) scanners in their onsite reading room and employs 17 FADGI-capable [Mekel Technology MACH-series scanners](#) in their microfilm and microfiche digitization department. Both brands are manufactured by Crowley and utilize full roll film and microfiche media capture and specialized processing software to ensure 100% image capture on the first pass. The scanners have proven themselves with increased productivity and unparalleled image quality.



NARA also owns a Zeutschel OP500 16/35 mm [archive writer](#) for digital records that require the long shelf life and security afforded by microfilm.



Document Scanners

Nearly all of NARA's archival preservation efforts are for paper records that have been reviewed and declassified. The 24/7 production capabilities of the German-engineered [InoTec SCAMAX® 400-series scanners](#) fit NARA's need for production efficiency, easy indexing, FADGI 3-star image quality and unparalleled performance endurance. NARA currently has nine InoTec document scanners in use and can take advantage of their ability to be upgraded in the field for future innovations.

Scanning Services

Through its [Digitization Services](#) division, as a subcontractor, Crowley scan operators have captured NARA collections digitally at onsite locations for more than two decades.

Technical Support

A key factor in the long-term partnership between NARA and Crowley is access to extensive technical support. From installation/training to software upgrades and maintenance agreements, Crowley technicians help NARA protect their wide range of scanner investments and work together to maximize image capture quality.

THE PROVEN RESULTS

Digitization methods are constantly being refined as technology changes. The partnerships that The Crowley Company has formed with key scanner manufacturers, coupled with its own three-part role as manufacturer, scanning service and support provider, offers an unparalleled opportunity to understand and meet client demands. As with NARA in 2004, when the equipment didn't exist, the collaboration allowed for an innovation that ultimately raised the industry standard.

Postscript: FADGI Imaging Standards

A lot has changed in the decade since the Zeutschel OS 14000 was created specifically to meet NARA's digital imaging specifications and this original case study was written.

As institutions acquired the technology to create high-quality images, the desire increased to create a measurable technical standardization to ensure consistent quality across Federal records holdings. In 2007, a group of Federal agencies formed the Federal Agencies Digital Guidelines Initiative (FADGI) to create a set of technical guidelines, methods and practices for digitized and born-digital historical, archival and cultural content. As of this reprinting, twenty government agencies, including NARA, are participants in the program and contribute to either still image or audio-visual guidelines.

The still image guidelines rely heavily upon strong capture hardware, target testing and analysis software to measure digital image color, precision and accuracy. The guidelines and technologies have played off each other's advancements, resulting in a moving and improving target for manufacturers and records custodians to create the highest-quality and most-consistent images. The majority of the scanners mentioned in this piece meet or exceed FADGI imaging standards.

About the U.S. National Archives Records Administration (NARA)

Known as the "nation's recordkeeper," the [National Archives](#) was established in 1934 by President Franklin Roosevelt with its major holdings dating back to 1775. NARA keeps only those Federal records (still, moving, oral and electronic) that are judged to have continuing value—about 2 to 5 percent of those generated in any given year.

About The Crowley Company

Incorporated in 1980, [The Crowley Company](#) is a world leader in digital scanning solutions and provides manufactured and resale capture hardware, digitization services and support to the library, academic, records management, archive, commercial and government sectors.

For more information visit: www.thecrowleycompany.com

“The demand for information in a digital format is strong. For an archivist, the dilemma is how to do this while keeping the original material pure.”
- Steven Puglia, former NARA Preservation and Imaging Specialist